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EXAMINER	
RODRIGUEZ, RUTH C	

ART UNIT	PAPER NUMBER
3677	

DATE MAILED: 11/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/030,445	SCHWARZBICH, JORG	
	Examiner	Art Unit	
	Ruth C Rodriguez	3677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-4, 9-15, 17, 19 and 21* is/are rejected.

7)☒ Claim(s) *5-8,16,18 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20 August 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 2, 3, 9, 10, 11, 15, 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geisthoff (US 4,075,872) in view of Hauptman (US 3,402,574).

Geisthoff discloses a telescopic mechanism (5,6) comprising an internal element (5), an external element (6) and ball bearings (8). The internal element has a flattening at least on one side (Figs. 1-4). The external element is complementary to the internal element (Fig. 2a). The internal element and the external element are movable relative to each other in an axial direction (C. 1, L. 4-9). The ball bearings guide the internal element in the external element and transmits a steering torque between the internal element and the external element (C. 1, L. 4-9). Geisthoff fails to disclose the use of roll barrels where at least some of the roll barrels are constructed as hollow elastic bodies which are elastically deformable. However, Hauptman teaches a telescopic mechanism (11,12) comprises an internal element (11), an external element (12) and roll barrels (18). The external element is complementary to the internal element (Figs. 1 and 2). The internal element and the external element are movable relative to each other in an axial direction (C. 1. L. 21-25). The roll barrels guide the internal element in the external

element. The roll barrels are oriented substantially transverse to the axial direction of movement between the external element and the internal element and which transmits a torque between the internal element and the external element (C. 1, L. 21-25 and Figs. 1 and 2). At least some of the roll barrels are constructed as hollow elastic bodies that are elastically deformable (Figs. 1 and 2). The roll barrels conform to the space between inner element and the external element and transmit the rotational forces between the external element in the internal element while allowing the axial movement of the internal and external elements. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the roll barrels as taught by Hauptman in the telescoping mechanism disclosed by Geisthoff where the roll barrels will be located at the flattening since the roll barrels will conform to the space between inner element and the external element and transmit the rotational forces or steering torque between the external element in the internal element while allowing the axial movement of the internal and external elements.

The hollow bodies taught by Hauptman are helical springs (18).

Geisthoff also discloses that the internal element has a polygonal external cross section and forms several flattenings that are supported in each case over a set of bearings at a corresponding flattening of an inner cross section of the external element. When the combination of Hauptman and Geisthoff is taken into consideration, the bearings will be hollow bodies taught by Hauptman.

The telescopic mechanism disclosed by Geisthoff further comprises a cage (1) that holds the ball bearings and fills a space between the internal element and the

external element with little clearance and forms a boundary for deformation of an external cross section of the hollow bodies (Figs. 1-4). Hauptman also teaches that the telescopic mechanism further comprises a cage (16) that holds the hollow bodies and fills a space between the internal element and the external element with little clearance and forms a boundary for deformation of an external cross section of the hollow bodies (Figs. 1-3).

The cage disclosed by Geisthoff forms several thickened section that in each case are assigned to a flattening of the internal element and accommodate a set of hollow bodies (when combined with Hauptman) and are connected with one another by flexible cross members (Fig. 2a).

3. Claims 3, 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geisthoff/Hauptman as applied to claims 2 and 21 above, and further in view of British Patent Document GB 530,342.

Geisthoff and Hauptman were combined above in paragraph 2 for the rejection of claims 21 and 2. Hauptman also teaches that the helical springs are tensile springs having coils. Since the coils are used between a cylindrical internal element and cylindrical external element, in an unstressed state, the coils do not lie against one another on block. However, British Patent Document GB 530, 342 (GB '342) demonstrates the use of hollow bodies that are elastically deformable as bearings for a vehicle. The coils of the helical spring, in an unstressed state, lie against one another on block (Fig. 4). The helical spring is formed from spring steel with a rectangular cross section (21) (P. 3, L. 127-130, P. 4, L. 1-3 and Fig. 4). The hollow bodies used as

bearings are very useful because they are flexible and when assuming the oval shape they reduce possible indentations (P. 2, L. 33-38). The rectangular or square shape of the helical spring gives it added strength (P. 4, L. 1-3). Therefore, it would have being obvious to one having ordinary skill in the art at the time of applicant's invention to have the coils of the helical spring, in an unstressed state, lie against one another in block as demonstrated by GB '342 in the mechanism disclosed by Hauptman and modified by Zernickel. Doing so, provides added strength to the spring (P. 4, L. 1-3).

Regarding claims 4 and 14, as stated above GB '342 demonstrates that the helical springs are formed from spring steel with a rectangular cross section (21) (P. 3, L. 127-130, P. 4, L. 1-3 and Fig. 4).

4. Claims 13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geisthoff/Hauptman as applied to claims 2 and 21 above, and further in view of Wells.

The combination of Geisthoff and Hauptman, used above in paragraph 2 for the rejection of claim 10, fails to disclose that a solid cylindrical roll supports an inner surface of the hollow body with clearance. However, Wells demonstrates how bearings can be formed as hollow cylinders (20) by a rolled-up blank such that the ends of the blank abut one another with formation of a seam. A solid cylindrical roll (18) that supports the inner surface of the hollow body with clearance limits elastic deformation of an outer cross section of the hollow body and is inserted into at least one of the hollow bodies (Figs. 1 and 2). The solid cylindrical roll serves to maintain the hollow bodies properly aligned (P. 1, L. 87-108). Therefore, it would have been obvious to one having

ordinary skill in the art at the time of applicant's invention to have a solid cylindrical roll within the hollow cylinders as taught by Wells in the mechanism disclosed by Geisthoff and modified by Hauptman. Doing so, is known in the art as taught by Wells and serves to maintain the hollow bodies in proper alignment.

5. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geisthoff/Hauptman as applied to claim 10 above, and further in view of Lennon et al. (US 5,345,679).

The combination of Geisthoff and Hauptman, used above in paragraph 2 for the rejection of claim 10, fails to disclose that the cage is an injection-molded part. However, Lennon teaches a cage (34) for bearings (32) made from a plastic sleeve blank provided with flexible cross members (60). The cage forms several thickened section that in each case are assigned to accommodate a set of bearings and are connected to one another by the cross members. The flexible cross members made to assure that the cage conforms to the shaped of the between the inner element (18) and the outer element (20) (C. 3, L. 53-51). The cage is an injection-molded part (C. 2, L. 50-57) that is produced as a stretched tape and is bent at the cross members into a shape corresponding to the external cross section of the internal element (Figs. 1-3F). Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have a cage with the flexible cross members taught by Lennon in the telescopic mechanism disclosed by Hauptman and modified by Zernickel. Doing so, conforms the shape of the cage to the shaped of the between the inner

element and the outer element and it is made easily by injection molding as demonstrated by Lennon.

Allowable Subject Matter

6. Claims 5-8, 16, 18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to claims 2-21 have been considered but are moot in view of the new ground(s) of rejection.

8. The Applicant argues that there will be no motivation to provide a flattening surface in the telescopic mechanism of Hauptman. The Examiner has modified the rejection for claims in such a way that Hauptman is now being used as the teaching reference since Hauptman clearly states that the helical springs conform to the space between inner element and the external element and transmit the rotational forces or steering torque between the external element in the internal element while allowing the axial movement of the internal and external elements.

9. Regarding claim 3, the argument presented by the applicant is that Hauptman fails to disclose that the coils lie against one another on a block in an unstressed state. The Examiner fails to be persuaded by this argument since the rejection to the claim has been modified in order to show that the use of a coil having coils lying against one

another on a block in an unstressed state is known in the art. Additionally, it is obvious that the coils will lie next to another on block when regular helical springs are used in a flat surface instead of the rounded surface disclosed by Hauptman since the separation illustrated by Hauptman occur due to the round shape of the inner and outer elements. The flat surface will maintain the coils evenly arranged so that the coils will be lying next to one another.

10. For claim 10 and 17, the cage being used for the rejection of these claims is the cage disclosed by Geisthoff having all the features mentioned on the claims.

11. Regarding to the arguments provided for claims 4, 13 and 14, the Examiner fails to be persuaded by the Applicant's arguments because reference GB 530,342 is being used as a teaching reference. The teaching being considered for the rejection of these claims is the fact that a helical spring is being used as a bearing irregardless of its orientation since Hauptman provides the teaching of the proper orientation for the helical springs. The Examiner modified the rejection to include the specific area of the specification that recites that the coils used by GB 530,342 can have a rectangular cross section.

12. Finally with respect to the use of the patent document by Wells, the Examiner will like to point out that the document is also being used as a teaching reference regarding to common knowledge about bearings. Wells does not have to disclose all the features of the current claims. In this case, the teaching being used for this rejection is the use of a solid cylindrical roll inside a hollow barrels that is clearly taught in Wells.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is included in Form PTO 892-References cited.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth C Rodriguez whose telephone number is (703) 308-1881. The examiner can normally be reached on M-F 07:15 - 15:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J. Swann can be reached on (703) 306-4115.

Submissions of your responses by facsimile transmission are encouraged. Technology center 3600's facsimile number for before and after final communications is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

Ruth C. Rodriguez
Patent Examiner
Art Unit 3677

RCR
rcr
November 1, 2004

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